DOCUMENT RESUME

ED 409 881 IR 018 503

AUTHOR	Donnan, Peter, Ed.
TITLE	Occasional Papers in Open and Distance Learning, Number 21.
INSTITUTION	Charles Sturt Univ.-Riverina, Wagga Wagga (Australia). Open Learning Inst.
REPORT NO	ISSN-1038-8958
PUB DATE	May 97
NOTE	48p.; For Number 20 in this series, see ED 401 887.
PUB TYPE	Collected Works - General (020) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Computer Literacy; *Computer Uses in Education; Distance Education; Educational Assessment; *Educational Change; Educational Development; *Educational Objectives; Educational Technology; *Electronic Mail; Foreign Countries; Higher Education; Instructional Development; Multimedia Instruction; Online Systems; Outcomes of Education; Student Attitudes; Student Experience; Teacher Effectiveness; Teaching Methods; Time Management; Use Studies
IDENTIFIERS	Australia (New South Wales); *Charles Sturt University (Australia); Listservs; *Technology Integration; Technology Utilization

ABSTRACT

This document contains two papers that deal with the shifts in learning and teaching at Charles Sturt University (CSU), Australia. The first paper, "Inaugural CELT Learning and Teaching Forum: Re-Examining Learning and Teaching at CSU, Outcomes and Further Actions," contains the outcomes and further actions arising from the inaugural CELT (Centre for Enhancement of Learning and Teaching) Learning and Teaching Forum held February 11-12, 1997. The paper examines the first-year experience; the relationship among teaching, assessment, and student learning; the use of technology to enhance student learning; and evaluation processes. It also includes a summary of Forum poster displays and demonstrations. The second paper, "Use of Electronic Mail Among Park Management Students at Charles Sturt University" (Dirk H. R. Spennemann), provides data and analysis of student e-mail usage patterns. With the transition to on-line systems, the use of e-mail and listservs will provide value-added dimension in terms of communication and interaction for off-campus students. Teaching staff are interested in exploring how they can use electronic communication to enhance learning, and the effect its use will have on the time required for teaching. The development of effective multimedia and computer-assisted learning is only possible if educators understand students' expectations, attitudes, and abilities in relation to computers and computer-based learning. (SWC)

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Occasional Papers

in

Open and Distance Learning

Number 21

Charles Sturt University

May 1997

Produced by the Open Learning Institute
Printed at CSU-Riverina Printery
Charles Sturt University

ISSN 1038-8958

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Editorial

Occasional Papers in Open and Distance Learning, Number 21, contains two papers which are pertinent to shifts in learning/teaching occurring at Charles Sturt University. These papers can also be accessed on the Internet using the following URL address:

http://www.csu.edu.au/division/OLI/pubs/occpap/no21

The first paper contains the outcomes and further actions arising from the inaugural CELT Learning and Teaching Forum held on 11th and 12th of February 1997. The Forum was a significant initiative within the University and it provided an opportunity for a broad cross-section of staff from different campuses to come together and consider critical areas of Learning and Teaching.

Rural universities such as Charles Sturt University have been closely affected by the turbulence occurring in the Australian Higher Education sector in recent years. Radical changes are occurring as a result of the inroads of economic rationalism, shrinking education budgets and increased competition for students in the market place. The fact that universities can now offer full-fee places after filling all of its predetermined enrolment quota of government subsidised places confers significant advantages upon older, metropolitan universities; furthermore, some of these universities are investing heavily in information technologies and entering open and distance learning markets which have been largely the traditional domain of rural universities.

In response to these developments there is some urgency for Charles Sturt University to differentiate the type of graduates it aims to produce, and in particular this means developing strategies to support lifelong learners. Resource based learning is significant in this sense. The critical issues examined at the Forum and summarised in the first paper include the first year experience, the relationship between teaching, assessment and student learning, the use of technology to enhance student learning and evaluation processes. The first paper also includes a summary of the Forum poster displays and demonstrations which some readers may like to follow up. It was indicated at the Inaugural Forum that the Centre for Enhancement of Learning and Teaching(CELT) regarded the initiative as the beginning of an ongoing process and in subsequent issues of *Occasional Papers in Open and Distance Learning* I hope to include further CELT publications.

In the second paper Dirk Spennemann provides some interesting data and analysis of e-mail usage patterns in a particular subject. With the transition to on-line subjects the use of e-mail and listservs will provide value-added dimension in terms of communication and interaction for off-campus students. Teaching staff will be interested in such questions as: how can I most effectively use electronic communication to enhance learning in my subject(s) and will its use erode, dissipate or in fact enhance my teaching energies in terms of the time inputs required? Studies such as Dirk's highlight issues to be considered by later adopters of the technology.

Peter Donnan
Editor

A call for papers

Occasional Papers in Open and Distance Learning is published twice a year, generally in April and November. As the title suggests, a considerable range of issues is appropriate for inclusion within the publication.

The editor would like to invite papers from CSU staff which focus on open and distance learning.

Please submit a copy of any material for publication in the next issue to:

Peter Donnan
Editor
Occasional papers in Open and Distance Learning
Charles Sturt University
PO Box 588
Wagga Wagga NSW 2678

Please note that if you are typing your paper, the editor can provide an IBM template (Word for Windows) or a printed style guide for contributors using other word processing packages.

Inquiries:

Peter Donnan
Phone: (069) 33 2338
Fax: (069) 33 2792
Email: pdonnan@csu.edu.au

Inaugural CELT Learning and Teaching forum: Re-examining Learning and Teaching at CSU Outcomes and further actions

CELT[1]

Abstract

It is crucial to state that the Learning and Teaching forum held on 11 and 12 February 1997 was a beginning not an event. It was a beginning in that it signalled a re-examination of Learning and Teaching and reinforced the centrality of teaching in the mission of Charles Sturt University.

It is also necessary here to reinforce the importance of sharing and collaboration in any process of re-examination of teaching and learning at CSU.

The main purposes of the inaugural CELT Learning and Teaching forum were to:
- encourage reflection on current Learning and Teaching practices;
- share understandings of problems, practices and possibilities for improvement;
- identify possible collaborative actions to enhance Learning and Teaching.

The forum was attended by 150 staff representing a wide range of faculties, schools and divisions (see Appendix 1 for attendance list).

The program involved presentations, group discussions, a poster/demonstration session and the collaborative development of action plans (see Appendix 2 for program). Appendix 3 lists all poster presentations and includes a brief description of each presentation.

This paper includes:
- a record of identified issues and suggested actions in the four key areas discussed by participants;
- recommendations for actions to be taken by schools, faculties, divisions and CELT;
- a brief summary of evaluations of the forum; and
- three appendices about the program and the process.

Contents:

Section 1 - The Four Critical Areas - Issues and Actions
- Area 1 - The first year experience - developing effective learning environments
- Area 2 - The relationship between teaching, assessment and student learning
- Area 3 - The use of technology in teaching to enhance student learning
- Area 4 - Evaluating Learning and Teaching and enhancing student learning.

Section 2 - Summary of Forum Evaluations
- Appendix 1 - Attendance List
- Appendix 2 - Program
- Appendix 3 - Poster Presentations.

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[1] For further information about the contents of this paper, contact Dr Mark McFadden

Section 1 - The four critical areas - issues and actions

In each of four critical areas, two groups met. The four areas were:

- Area 1 : The first year experience - developing effective learning environments
- Area 2 : The relationship between teaching, assessment and student learning
- Area 3 : The use of technology in teaching to enhance student learning
- Area 4 : Evaluating Learning and Teaching and enhancing student learning.

Each group identified at least three key issues in each critical area and developed resolutions and action plans. Each group reported on one of these issues in the final session of the forum. An overview from each group is included here.

Area 1: The first year experience.

Issue 1 - Enhancing students' study skills

It was considered necessary to:

- increase self confidence;
- initiate peer support;
- develop personal responsibility;
- offer more study skills assistance;
- identify students at risk;
- offer greater accessibility;
- facilitate student networking.

By carrying out the following actions:

- Careful selection of students.
- Establishment of formal cooperative learning groups, using student operated e-mail.
- Provide greater access to alumni.
- Provide workshops for academics on first year Learning and Teaching.
- Develop a mentoring system.
- Inform students of their rights and responsibilities with a student charter.
- Improve access to student services.
- Organise more staff/student social events.
- Obtain regular feedback from first year student representatives.
- Establish first year Learning and Teaching committees and coordinators at school level.
- Develop a formal, integrated study skills program.
- Have course coordinators provide course overviews to students.

- Carry out evaluation/research into first year student needs.
- Adopt a more integrated approach to orientation days.

Issue 2 - Refining the administrative system

It was considered necessary to:

- provide comprehensive and consistent information to students;
- ensure that first contacts are positive.

The following actions were suggested:

- Subject all information sent to students to audit and quality assurance.
- Provide open and supportive channels of communication from the pre-enrolment stage.
- Link feedback with positive actions when students experience problems.
- Brief Education Committee to pay special attention to 1st year issues.

Summary of relevant actions

Staff development implications

CELT should offer a series of workshops addressing the special needs of beginning students.

These workshops should be complemented with a practical manual covering all identified issues.

Policy implications

Schools should establish a coordinator and committee to deal with first year issues.

The Academic Senate should establish a sub committee of the Education Committee to develop policy for first year Learning and Teaching.

CELT and Student Services should develop a comprehensive support program to enhance the learning skills of first year students.

Student Administration should develop more open and supportive channels of communication.

All information sent to students should be subject to a quality audit.

Links between students, their peers, ex students and staff should be strengthened.

A student charter should be developed, which outlines rights and responsibilities.

Area 2: The relationship between teaching, assessment and student learning.

Participants said there was a need to provide support for a diverse staff and student population. This support was seen to be both formal and informal and underpinned by

a recognition of the importance of Learning and Teaching, particularly through processes of selection and appointment, induction, probation and promotion. At another level, staff want access to best practice in teaching and assessment. They want to find out what their colleagues are doing but they want to situate this practical 'how to' knowledge in a framework where purposes of assessment are clearly understood and the quality of assessment is assured.

Main issues:

- Dealing with student and staff diversity;
- Recognising and rewarding teaching;
- Disseminating best practice in assessment and teaching;
- Ensuring quality assessment;
- Supporting staff and students by providing help and resources;
- Understanding purposes of assessment.

Actions - Policy

University level	**How? By whom?**
Letter to Senate regarding tension between assessment norms and best practice in assessment	CELT to request revision of policy
Give more recognition to teaching in processes of selection and appointment, induction, probation, promotion	CELT to request revision of policies
Establish mentoring system	For Academic Staff Development Plan
Develop a handbook on Learning and Teaching	CELT to apply for staff development grant
Audit adequacy of teaching facilities	DVC (Services)

Faculty and School level	**How? By whom?**
Encourage mentoring schemes	Faculties and schools to review funding and support
Establish links with industry	
Discuss RPL	
Communicate assessment guidelines to students clearly	
Support Teaching Development Committees	

Actions - Staff development

University level	How? By whom?
Provide mentoring schemes	To be included in Academic Staff
Provide more opportunities for staff discussion and interaction	CELT homepage to be established - to include listservs and Newsgroups CELT to run staff seminars
Staff development package needed to illustrate different learners, varied purposes of assessment, importance of feedback	CELT to apply for CUTSD National Teaching Development Grant to facilitate
Staff and student seminars on assessment using colleagues as supports	CELT to facilitate

Faculty and School Level	How? By whom?
Provide mentoring schemes	School Teaching Development Committees to explore
Provide more opportunities for staff discussion and interaction	
Staff seminars on assessment and learning focusing on the purposes of courses and subjects and the role of assessment in learning	

Area 3: The use of technology in teaching to enhance student learning.

This report attempts to collate responses from participants of the Technology and Learning groups into common themes. Action statements that address these issues have evolved since the forum. As such these items need to be seen as draft statements that require further comment from all sections of the University community.

Summary of key issues

Policy issues

- Equity and access continue to be a popular topic, both in terms of student/staff access to the technology as well as access to the training in its use. Access was considered in terms of both physical and economic limitations. Parks students living in wilderness areas have very little access to technology. Students in rural areas have very limited access to broad band services. One specific issue was the perception that males exhibit a faster uptake of the technology than females. Are

there any gender specific programs that need to be designed to deal with this problem?

- Copyright/intellectual property.
- The level of technical resources available to staff limit the development and use of technology in teaching (PCs with limited memory, low resolution monitors, very dated versions of software such as web browsers).
- Recognition of the value of teaching vs research.
- Recognition of development of major projects involving technology vs recognition of research.
- Time to develop additional strategies or implement new technologies.
- Lack of feedback from OLI re the use of study packages (?evaluation).
- Institutional support of academics in the development of technology in teaching.
- Industrial issues (dealing with electronic assignments, external markers and technology, staff loads).

Staff development issues

- All staff need to develop basic competencies in the use of technology. More specific competencies can then be developed as required. The competencies need to be identified and a program developed to address these needs.
- What potential uses does the technology have in supporting teaching and learning?
- How do you accurately identify student needs?
- When should a technological solution to a learning problem be sought?
- How is the need for a technological solution identified?
- How is the use of the technology evaluated?
- How does the technology change the nature of communication?
- An understanding of educational theory is needed to appreciate the role of technology in education.
- Is there a changing role for library staff in a move to more technology in education?
- Can individual learning styles be satisfied through the use of technology?
- How do we overcome 'technology anxiety' among staff and students?
- How do we know what other institutions are doing in the area of technology?
- How do we keep in touch with developments across campuses of CSU?
- Staff (?and students) need training in effective presentation techniques.
- Where can staff find examples of best practice?
- Guidelines required for the use of technology in education

Key Issues	Action Statement	Suggested Solution
Equity and access in relation to student/ staff access to the technology.	A policy be developed to deal with the issue of access and equity in the use of technology. This policy must specify the minimum computer hardware and software a student requires to successfully complete a course or subject offered by the University. It must also specify the additional support that will be provided for those students that take advantage of the technology, for reasons of disability or geographical isolation.	The ILSG determine policy in conjunction with CELT, DIT, academic staff and student representatives.
Copyright/intellectual property.	The University is to provide advice about the legal issues associated with electronic publishing, and that the position in respect to ownership of intellectual property be clarified.	Policy to be made available to all staff.
The level of technical resources available to staff for the development of technology for teaching and learning is limited.	Resources for the development of educational technological be made available. These resources include both equipment and personnel.	CELT inform staff about the facilities available at the Learning Media Labs on each campus. CELT to identify needs, that include both training and resource needs. CELT, in conjunction with DIT, provide advice about the type of technology tools that are available for use by the academic staff.
Recognition of the value of teaching vs research. Recognition of development of major projects technology vs recognition of research.	That recognition be given to the development efforts of staff involved in major projects using technology to enhance teaching and learning.	University policy be developed to recognise these needs.

Institutional support of academics in the development of technology in teaching.		
Time to develop additional strategies or implement new technologies.	That academics be given assistance to manage the introduction of new technologies, through the form of time release.	Academics be seconded to work on major projects, with the view to sharing this experience among peers. This person could become the mentor for others in the school or faculty embarking on projects involving the use of technology in teaching. Special leave be granted to those academic staff wishing to undertake a major project.
Lack of feedback from OLI re the use of study packages (?evaluation). Industrial issues (dealing with electronic assignments, external markers and technology, staff loads).	Results of any evaluation of the use of technology in education within CSU be made available to all staff.	Results be published in *Occasional Papers*, on the CELT web site.

Staff development issues

Key Issues	**Action Statement**	**Suggested Solution**
Staff need basic competencies in the use of technology.	All staff need to develop basic skills in the use of technology. More specific skills can then be developed as required.	CELT to conduct a needs analysis to identify competencies. CELT and DIT to conduct staff development programs. These competencies be addressed during the induction process for new staff.

What potential uses does the technology have in supporting teaching and learning? How do you accurately identify student needs. When should a technological solution to a learning problem be sought? How is the need for a technological solution identified? How is the use of the technology evaluated? How does the technology change the nature of communication? An understanding of educational theory is needed to appreciate the role of technology in education.	All staff involved in the use of technology to support teaching and learning require access to a training program dealing with these issues. After completing this training the participant should understand the limitations and advantages of using different types of media, the learning strategies that can be accomplished through the use of technology, and an understanding of the pedagogical theories that underpin the use of technology in education.	CELT to ensure CELT staff are offered the chance to develop the skills and knowledge required to enable appropriate advice be given to academics concerning the appropriate use of technology. CELT to develop and deliver suitable training programs on a regular basis. Applied research into the use of technology in education be conducted by CELT and the results be disseminated via Occasional Papers and the CELT web site.
Can individual learning styles be satisfied through the use of technology? How do we overcome 'technology anxiety' among staff and students? Staff (and students) need training in effective presentation techniques. Where can staff find examples of best practice?		CELT to provide examples of technology enhanced courses or subjects from CSU or other institutions. CELT develop guidelines for the use of technology in education
Is there a changing role for library staff in a move to more technology in education?	Clearly identify the role library staff play in the use of technology in education.	Library staff to provide information about specific services that are available to support the use of technology (such as searches for on-line resources to support or replace current subject readings).

How do we know what other institutions are doing in the area of technology? How do we keep in touch with developments across campuses of CSU?	The staff of the University shall be provided the opportunity to participate in continuing education programs with the aim of remaining informed of the work done within CSU and other institutions.	CELT to establish links with other universities for the purpose of collaboration on development or research projects. CELT to provided links from the CELT web site to provide a 'window' on work done within CSU and in other institutions. CELT to conduct forums for the purpose of sharing ideas between people working, or intending to work with technology in education. Specialists in this field should be invited to speak at these forums.

Area 4: Evaluating Learning and Teaching and enhancing student learning

It is important to examine the key issues emerging out of the deliberations of and brainstorming by two separate groups within the overarching context of the four main areas - the First Year Experience, Teaching, Assessment and Learning, Technology and Learning and the Evaluation of Teaching and Learning. This will enable the identification of:

- any universal or predominant concerns;
- any identifiable causal factors (rather than a listing of symptomatic manifestations) .

Key Issue 1

- Evaluation is integral to Teaching and Learning since its purpose is to facilitate learning of teachers and learners.

Resolutions

- To achieve a culture shift within the University. This would imply a paradigm shift in CSU's organisational culture from perceiving evaluation as a secretive activity with negative, punitive overtones towards valuing evaluation as an integral and developmental component of Teaching and Learning.

- To implement comprehensive systems to provide constructive support for evaluation.

Actions

For any emergent strategies and/or actions to have a fair chance of succeeding, the stakeholders need to be presented with:

- a rationale that clearly and unambiguously presents the benefits of evaluation to all concerned: (who is to do this?);
- collaborative and consultative avenues that allow full and frank discussion among various groups (Heads of School, individual academic staff, Education Committee, academic union, course committees, etc);
- adequate orientation and training in the various aspects of evaluation (Academic Staff Development Unit, Tertiary Teaching Colloquium, CELT forums).

Key Issue 2

- Shift in ethos to recognising evaluation as a fundamental means to quality teaching.

Resolutions

- Encourage and support the strategies to bring about this shift.

Actions

- Educate the staff on various evaluation techniques.
- Educate staff on understanding Learning and learning Teaching theories.
- Recognise, reward and support good teaching in ways that parallel the recognition, reward and support of good research.

Broad grouping of issues generated at the brainstorming sessions on evaluation of teaching and learning

Ethos within CSU/schools

- Need for more public knowledge - sharing - transparency - pools of experience.
- School ethos has to be changed so as to embrace evaluations in the sense that they lead directly to the enhancement in the quality of teaching.
- Institution needs to make clear distinctions between recognition/reward for Teaching on the one hand and Research on the other.
- There is a perceived inter campus and inter school insularity.
- Also intra campus/school divisions.
- There needs to be a shift from the closed, punitive, secretive to open, developmental model.
- CSU system is too focussed on student evaluations.
- There seems to be a defensiveness among staff to go in for evaluations.

- CSU needs to be perceived as an institution that recognises and rewards good teaching.
- Need for a change in culture and ethos among schools/divisions.

Evaluation for development

- Evaluations are an integral means of developing staff and the emphasis should be developmental and all follow-ups should be purposeful and meaningful.
- Need to go beyond evaluating classroom learning and move into the labs, studios, practicals, clinicals etc.
- Evaluation is integral to teaching and the aim is to improve and facilitate learning.
- Reflective practice should yield a record that interprets experiences and insights and future courses of action.
- An identification and sharing of best practices.
- A readiness to involve oneself fully in the evaluation process since this is the other side of effective teaching.
- Feedback to staff should be timely to allow for time for improvements and modifications.
- Evaluation must be disassociated from conditions of employment.

Discussion forum

- If CSU is serious about Lifelong Learning, then clear criteria as to what constitutes LLL, will have to be spelt out (are these measurable?).
- How is Lifelong Learning to be quantified?

Training/education/information

- A clear orientation to the administrative and interpretive aspects of evaluation needed.
- Heads of Schools do not always have the knowledge/time/ability to provide positive feedback and follow up to academic staff.
- There needs to be a listing of the various strategies for effective Teaching and Learning for staff to consult in order to more intelligently venture into a strategy of their own.
- Staff need inputs on Learning theories and how these underpin effective teaching practice.
- Teaching Training Colloquium a useful input; should not be restricted to new staff; should also have specific input areas in addition to the generic nature which will help staff seeking answers to specific problems.
- Peer and students have to be oriented to give constructive feedback.
- More education and information to staff on the different types of evaluations and their administration and scoring and interpretation.
- Modules/packages to be made available to staff containing useful advice, illustrations of best practice in teaching over a range of situations.

Collaboration

- Need for more collaborative problem solving among the stakeholders.
- Need to share information on how colleagues gather feedback; needs to be more sharing within schools.

Comprehensive evaluation systems

- While students are a vital source of feedback, they should not be the only source.
- Oral evaluations are one type for on-campus students.
- Use of evaluating instruments and sources that correspond with and are suited to the different types of teaching situations.
- Industry and alumni are good and important sources for obtaining feedback.
- Introduce exit interviews for graduating students.
- A comprehensive evaluation system that incorporates as many different sources of data; that covers all modes of instruction and all dimensions as clinical/practical/studio/etc.
- It is important that students perceive that their feedback has been incorporated in meaningful changes.

Support

- CSU's questionable attitude towards support for teaching and teaching staff.
- Need for building in CSU a tangible and uniform support for teaching.
- CSU must offer more support in the post evaluation phase when important remedial work based on findings needs to be done.

Resources

- Resource limitations impinge on the evaluations - less time to use peer evaluations meaningfully and informal oral or written student evaluations.
- Time needs to be provided to staff for evaluations.
- Lack of resources like library/bookshop/furniture/equipment etc often contaminate students' minds so that they negatively manifest the halo effect.

De-evaluation

- Feedback from DE students is more difficult to obtain.
- Needs to be a focus on de-evaluation.
- DE students pay for services they do not obtain services for; their resentment is passed on to through their evaluation of the teacher/subject.

Researching teaching and evaluation

- Staff can take a research approach to the evaluation of their teaching so as to accommodate the research component in their resume/portfolios.

General: perceptions & philosophies

- Sometimes the rigour with which a dedicated teacher teaches can be negatively perceived by students in comparison to a casual easy going colleague.
- Only the effective staff go in for the voluntary evaluations.
- Double standards from members who sit on teaching panels who expect the candidate to practise methods which they themselves have never done.
- Desperate times yield productive things and these times may necessitate staff evaluating their teaching in order to survive.

Section 2 - Summary of forum evaluations

In the final session an informal evaluation was completed where the participants indicated broad approval for the forum. They also made specific comments and suggestions in writing both on the conduct of the forum and with respect to future forum planning.

Participants found the opportunity to network and share concerns with colleagues about practical Learning and Teaching issues the most useful part of the forum. The information provided in the form of papers, presentations and posters was also of considerable value. The forum was perceived as offering an excellent opportunity for both individual and group reflection and to contribute to future Learning and Teaching policy and staff initiatives.

Participants had conflicting views about how future forums could be improved. Some wanted fewer posters while others wanted more. A common thread, however, was the request for more time to share Learning and Teaching practice and more time for group discussion. For future forum planning, participants felt more time could be given to the discussion of practical issues rather than policy issues. They also felt that it was important to have more heads of school and deans involved.

Participants said they would take a number of specific actions at a subject and course level as a result of the forum. These included:

- rethinking subject outlines;
- collaboration on subject development;
- initiation of reflection, sharing and communication processes at school level;
- experimentation with assessment and teaching ideas.

Participants' actions were clearly focused in each of the key areas of concern: the first year experience, assessment and learning, technology and learning, and evaluation of teaching. Most importantly, there was a feeling that it was necessary to, 'keep talking to colleagues' and 'continue communication with newly met colleagues' to maximise the energy and enthusiasm generated at the forum.

Conclusion

To reiterate, it is important to see the inaugural CELT Learning and Teaching forum as the beginning of a process of support rather than as a discrete event. Forum participants, through a process of collaboration and consultation, identified key issues and actions in four critical areas. The insights gained will provide the basis for a

structured series of actions which will involve both staff development initiatives and reconsideration of policy issues at school, faculty and university levels.

To date the forum has had a direct impact on the:

- revision of the Lifelong Learning Working Party paper for the Education Committee and Academic Senate;
- shape and content of the Academic Staff Development Plan for 1997 including plans for the establishment of roundtables, listservs and electronic discussion groups for academic staff;
- projects planned for CELT including the Student Development Program aimed at supporting student learning;
- development of individual, organisational and staff development CUTSD grant applications;
- development and submission of grant applications to CMC Access Australia.

Appendix 1 - Attendance Learning & Teaching - 1997

Learning and Teaching forum
11 and 12 February 1997
Convention Centre, CSU-Riverina

Altogether 150 staff participated in the Learning and Teaching Forum. The Vice Chancellor, a Deputy Vice Chancellor, a Pro-Vice Chancellor, 1 Dean, 3 Executive Directors, and 5 Heads of School attended sessions. Altogether 6 Professors attended. 85 of the participants were male and 65 were female.

By Campus:

Bathurst	35
Albury	22
Wagga Wagga	88
Goulburn	4
Manly	1

Academic staff by school (5 or more):

Teacher Education	10
Education	10
Agriculture	9
Biomedical Science	7
Information Studies	7
Environ and Information Studies	7
Community Health	7
Financial Studies	6
Science and Technology	6
Communication	5
Humanities and Social Science	5
Wine and Food Science	5
Total academic staff	**103**

Support staff (largest groupings):

OLI	17
Student Services	6
Library	4
DIT	3
Total management/support staff	**47**

Appendix 2 - Program and commentary on process

Centre for Enhancing Learning and Teaching (CELT)
Inaugural Learning and Teaching forum

Re-examining Learning and Teaching at CSU

Tuesday 11 February 1997

10.30 am **Morning Tea**

11.00 am - 1.00 pm **The Educational and Political Context of Learning and Teaching for CSU**

1. Opening - Ian Barnard (session Chair)
2. 'The Political Context' - Bernie O'Donnell
3. 'Towards a re-examination of Learning and Teaching at CSU' - Judith Parker and Bob Meyenn
4. Panel discussion (members of Life Long Learning working party) and open forum.

This session provided a framework for re-examining Learning and Teaching at CSU. A discussion paper, Towards a Re-examination of learning and teaching at Charles Sturt University, was made available on the web to all CSU staff prior to the forum and provided in hard copy to all forum participants. Staff had the opportunity to critique the paper and offer suggestions for its revision in both small groups and in plenary. It is proposed that this paper will be published in the next edition of *Occasional Papers in Open and Distance Learning*.

1.00 pm - 2.00 pm **Lunch**

2.00 pm - 3.30 pm **Session Two: Raising the Issues**

Four speakers:

- Tony Hepworth - the first year experience
- Mark McFadden - assessment and learning
- Bill Lord - technology and learning
- Derek Sequeira - evaluating Learning and Teaching

had 10 - 15 minutes each to raise issues of critical importance for enhancing Learning and Teaching across the university. The speakers had a broad brief to canvass central issues on each of the topics and to identify good practice both at CSU and other universities. An open forum followed.

The critical areas addressed were:

- The first year experience - developing effective learning environments.
- The relationship between teaching, assessment and student learning.

- The use of technology in teaching to enhance student learning.
- Evaluating Learning and Teaching and enhancing student learning.

3.30 pm - 4.00 pm **Afternoon Tea**

4.00 pm - 5.30 pm **Session Three: Sharing Good Teaching Practice**

A range of poster displays/demonstrations were available for participants to meet with others and share ideas. The posters followed broadly the critical themes which the forum addressed. See appendix 3 for a list of poster titles and the names of presenters. A brief description is included for each presentation.

7.00 pm - 7.30 pm **Dinner**

The Vice-Chancellor spoke at dinner about the challenges confronting CSU into the future. It is clear that the West Committee will have a significant impact on the structure, funding and content of higher education. The Vice-Chancellor argued CSU is well placed to take advantage of shifts in enrolment patterns providing we are clear about our goals and mission and are innovative in our approaches to teaching.

Wednesday 12 February 1997

9.00 am - 11.00 am **Session Four: Promoting Effective Learning**

- The first year experience - developing effective learning environments.
- The relationship between teaching, assessment and student learning.
- The use of technology in teaching to enhance student learning.
- Evaluating Learning and Teaching and enhancing student learning.

11.00 am - 11.30 am **Morning Tea**

11.30 am - 1.00 pm **Session Five: Promoting Effective Learning**

- The first year experience - developing effective learning environments.
- The relationship between teaching, assessment and student learning.
- The use of technology in teaching to enhance student learning.
- Evaluating Learning and Teaching and enhancing student learning.

Sessions 4 and 5 gave participants the opportunity to engage in focused group discussion on the critical areas above. Participants were able to choose a different group for each session. Group leaders recorded each

group's decisions, solutions, concerns, dilemmas and this material was used as the basis of the presentation in the final session.

1.00 pm - 2.00 pm **Lunch**

2.00 pm - 3.30 pm **Closing Session: Directions and Strategies**

Judith Parker and Bob Meyenn began the session by stating what they saw as major concerns from the groups. They demonstrated some practical teaching strategies for participants to take away and implement.

Group leaders and group members conducted a plenary session aimed at focusing attention on broad directions and specific issues to have emerged from the forum. Each group nominated suggested actions for each specific issue nominated.

3.30 pm **Afternoon Tea and Close**

Appendix 3 - Listing of poster presentations

Learning and Teaching forum 1997
From session three: Sharing good practice

A range of poster displays/demonstrations for participants to prompted the sharing of ideas and experiences. The posters followed the broad critical themes which the forum addressed.

The poster titles and the presenters are listed below. If you are interested in the abstract why not get in touch with the presenter (use the CSU *Communications Directory*).

1 **John Atkinson**
Using the Web

Using the Web as a medium to complement traditional teaching and learning practices is becoming more prevalent. However there are many pitfalls we need to be aware of. This poster session will highlight some of these issues and also offer constructive advice as to how to more effectively use the Web as a medium for teaching and learning tool.

2 **Deri Hadler and Ron Kerr**
A demonstration of the 'Auscultation', a multimedia based entry level trainer for nurses, paramedics and medical professionals.

Auscultation, the use of a stethoscope, has proved extremely difficult to learn outside the hospital system. The subtlety of the sounds combined with the need for live, and ill, patients makes learning this skill extremely hard in the university environment.

This project, in its first stages of development, uses a custom designed digital recording stethoscope to gather authentic auscultation sounds, and multimedia interactive technology to allow the students to hear the sounds in a realistic environment.

3 **Dave Jeffries**
Demonstration related to the theme 'The use of technology to enhance student learning'

NSW HSC On-Line
A Charles Sturt University Initiative http://hsc.csu.edu.au

The NSW HSC On-Line Web site is being developed as a joint venture with the NSW Department of School Education, and with cooperation from other major agencies in NSW having a major investment in the HSC enterprise. Many CSU Faculty and Divisional staff have made significant contributions to the development of the site, which will go 'live' in the first week of March, 1997.

The demonstration of the site will show the beginnings of a rich resource for supporting HSC students' learning and providing up to date professional information for teachers. The collaborative nature of the site will be explained

with emphasis being given to the publishing software developed for the project by the Albury CSU Online team.

4 **John Messing**
Who Wants to Use an Electronic Book?

With all the talk of producing electronic teaching materials there is an impression that these electronic materials are able to be built using the paradigm of the book. This session will look at what features of books are able to be adequately ported across to the electronic version as well as discuss features that have been developed over many years experience that do not come from books. In particular it will deal with issues of what students ACTUALLY want and use.

5 **David Lamb**
Technological aids for technological subjects - the Physics experience

Like most technology-based subjects, Physics is often perceived as difficult by students and non-related academics alike. The necessity of technologically orientated subjects like physics in a course may be obvious to practitioners in a related field but the real challenge lies in getting that message across to students. A core physics syllabus, for example should present a balance of foundation topics, the teaching of basic laboratory skills and provide students with an insight into the current state of technology in their chosen field- yes, even a first year service subject! The last is often conveniently neglected in favour of the first two as lecturers grapple with squeezing syllabus requirements into shrinking time frames. Ironically it is this component which potentially offers students the clearest insight into where that subject 'fits in' the scheme of things.

Such pressures and challenges exist in the delivery of Physics as a service subject in a variety of courses at CSU (ranging from the Wine & Food Sciences to Environmental Science). One means of compensating for the squeezing out of a formal 'technology' component in the Physics syllabus has been to incorporate technology into the many lecture demonstrations and interactive student laboratory experiments. The use of computer simulations in lectures, for example Millikan's famous 'Oil Drop Experiment', innovative high and low-tech live demonstrations, and computer-based data acquisition and processing in the teaching laboratory all expose students, albeit by stealth, to relevant technologies. In those physics subjects where this strategy has been employed informal student interviews, class discussions and formal student evaluations have indicated a significant improvement in student satisfaction with the particular subject, and this has been supported by a corresponding improvement in class performance.

Effective technological aids, both simulated and live do not have to be expensive if one has access to reasonable computing facilities, some basic workshop facilities, advice and perhaps an eye for a bargain.

The poster presentation will discuss general aspects of the physics experience and will include an example of each of the above types of technological aid as used in lectures and teaching laboratories.

6 **Garry Hoban**
Student Teachers Creating Personal Learning Profiles

In EMS204, pre-service teachers use a reflective journal to analyse their learning and critique my teaching on a weekly basis. This gives me ongoing feedback on my teaching and the students synthesise their weekly reflections at the end of the subject to create a personal learning profile.

7 **Jenny Wilkinson**
Changing teaching and assessment to incorporate generic attributes.

The recent push towards incorporating generic attributes and skills into courses has lead to changes in assessment and the way subjects are taught. Over the past four years I have been part of a group in the School of Biological Sciences, University of Sydney which has tried a number of approaches to address this issue. This poster presentation puts forward a number of ideas which were used in a large (~ 900 students) first year group to develop better written and oral communication, teamwork and critical evaluation. This included devoting class time to discussing writing within the context of biology, specifically assessing writing skills as part of assignments, class exercises designed to encourage teamwork and peer and self assessment of work. Not all of the ideas and changes tried were successful and some of the reasons and pitfalls are put forward for consideration.

8 **M Whitelaw**

Last semester I taught a subject in which there were a number of overseas students who came from a culture that emphasised group work. These students expressed the desire to work 'in a more Asian way' i.e. as a group. This was allowed on the understanding that the comprehension that was required by an assignment would be internalised so that they could answer the relevant question on the exam.

Some preliminary statistics are available that measure the degree of independence of the students and their exam results to determine if this was a successful method of helping these students.

9 **Myles Breen**

Part of the teaching function is gaining feedback from students and former students and acting on what is found. This paper concerns following up on Tracking Research by the Graduate Careers Council of Australia regarding the CEQ (Course Experience Questionnaire) and Graduate Destinations. It advocates continuous monitoring of student evaluations, changing course and practices to suit if appropriate, and giving stamped self-addressed envelopes to graduands to maintain accessible database.

10 **Leonora Ritter**

But how can you show me what has happened inside your head? - the evolution and evaluation of the 'Controlled Assessment Procedure' (CAP). Involving students in their own assessment.

This presentation looks at the function of assessment and the problems encountered in various methods trialed over the years. It explains the' controlled assessment procedure' developed as a result of many years of trial and error and evaluates that method against a number of criteria.

11 **Dirk H.R. Spennemann**
Can tutorials modify perceptions?

To provide students with the skills and knowledge to understand concepts in cultural resource management and to be able to respond critically to current topics, tutorials were run with two students presenting and arguing diametrically opposed points of view. The attitude of the student population (n=150) to the discussion topics, polled at the beginning of the term, was polled at intervals during the term (one week after the relevant tutorial, after return from mid-session break, end of term). Major shifts in opinion could be observed after the tutorials with small readjustments as time progressed. Most significantly the numbers of 'don't know' answers dropped showing that the tutorial format facilitated idea formation and opinion building. Differences between personalised and anonymous questionnaires could be observed.

12 **Dirk H.R. Spennemann**
Do students read their e-mail?

Electronic mail has become all pervasive at CSU. Most of our inter-office communication is conducted via this medium or via WWW announcements. But do students see it the same way? Response times to messages sent to all students enrolled in a subject were measured, which show that some students took more than 80 days to read their mail. The total number of students reading their mail dropped near the end of term, at a time when much use was made of the medium. Little correlation was observed between the frequency of e-mail reading and the final student grade (see the following paper in this edition of *Occasional Papers in Open and Distance Learning*).

13 **Brian Hemmings and Peter Donnan**
University Learning and Teaching Program/Graduate Certificate of University Teaching and Learning, 1997.

Subject modules available to staff in 1997, and how the program is structured.

14 **David Meacham**
Facilitating Student Learning

This poster describes the content of a subject available for all members of teaching staff. The subject can be done as a component of either the Graduate Certificate in University Teaching or as a stand alone subject for personal/ professional development. The subject covers the nature of student learning, course design, delivery and assessment.

15 **Lyn Angel & Mark McFadden**
Responses to Peer Assessment

Lyn and Mark are currently using peer assessment in 2 postgraduate subjects from the School of Biomedical Sciences and the School of Teacher Education respectively. Although these subjects are both at postgraduate level, Lyn and

Mark believe that this is an appropriate form of assessment which could be considered progressively from level 1 subjects on. They will discuss the way in which peer assessment has been used in these subjects and relate their use of this approach to the aims and objectives of the subjects.

16 **Paul Worsfold**

The Division of Student Services is conducting a pilot Student Development Program on the Wagga Wagga campus in Autumn Session 1997. This pilot program is targeted at first year students selected from the Schools of Management and/or Financial Studies.

The background to this initiative is a paper being written by staff in the Division of Student Services, concerning the identification of a service delivery model to guide the professional work of all student services personnel. What has been highlighted so far, building upon literature Previews on 'student development theory', and student development activities prevalent among service practitioners in North America, are aspects of service delivery which both complement curriculum as well as enhance the academic mission of the university.

Interest among service practitioners at CSU has been high as until now their work has been largely reactive to presenting students' problems, instead of adopting a modality which seeks to get out among students initially, aiming to strengthen their personal attributes and skills in order to sustain their tertiary study and 'add value' to their degree programs by introducing students to other competencies now being sought in the graduate employment market.

This poster demonstration will outline more fully the nature of the pilot program, including the development and writing of its ten component modules. Some discussion of our divisional paper, 'Models of Service Delivery and Client Needs' may also be possible.

17 **Sally Denshire; Claudia Walker; Tracy Fortune; Lynne Adamson; Clare Wilding**
Integrating Learning and Assessment: Innovations from the School of Community Health

This poster reports on the introduction of an innovative assessment item, which required third year occupational therapy students to integrate their understanding of subject matter from four distinct subjects through submission of an integrative essay. The mark for this essay was distributed equally among the four subjects. Many challenges were presented for both students and lecturers.

18 **Chris Gordon**
Learning context and learning approach

This paper reports the general findings of three studies which aim to develop learning contexts that foster deep learning and enhanced teacher efficacy. The first report describes the results of a longitudinal study which used surveys of students' learning approaches, control orientation and efficacy beliefs following a year's exposure to the traditional training program. These data describe the link between learning approach and teacher efficacy.

The other reports describe the results of studies using a quasi-experimental design embedded within an action research paradigm, which aimed to assess the impact of altered teaching environment on the learning approach, control orientation and efficacy beliefs of final year education students. The studies' further aim was to assess the effectiveness of action research as an enabling process to achieve appropriate altered environments. These results will inform the third stage of the longitudinal study to be undertaken in 1997.

Key Words: learning approaches, teacher efficacy, locus of control, educational contexts, higher education.

19 **Baseer Jeeawody and Lindsay Smith**

Quality of primary health care in the future will require nursing graduates to display increased flexibility, better targeting of limited resources and maintain accountability. The opportunity for nurses to increase their presence as confident primary health care practitioners' and make valuable contribution to the health of the community is now available. If the community and the nursing profession are to take advantage of this opportunity, nursing courses at tertiary institutions must provide students with experiences that enable them to participate in problem solving and collaborative decision making within the community and primary health care settings.

Providing such opportunities, and equipping nursing students adequately so that they enhance their professionalism, develop effective primary health care skills and become more accountable to the community are some of the requirements necessary for the undergraduate development of the future nurse practitioners.

First year nursing students at Charles Sturt University, within the Faculty of Health Studies, are given the opportunity, as part of the 'NRS 127 Clinical Nursing Health Promotion subject', to research, plan, budget and implement primary health care and health promotion programmes within the local community. The successful implementation of these community programmes provide the students with a forum to experience accountability, leadership, group dynamics, community health assessment, programme evaluation techniques, principles of collaboration and negotiations within the community. It provides them with an opportunity to promote primary health care within a defined community group, thus enhancing the health of a local population and at the same time creating an awareness of the primary health care role of the nurse within the community. Community groups' in which the students have collaborated with since the programmes inception at the Riverina campus in 1992 include:

- pre-schools,
- primary and secondary schools,
- community aged care services and facilities,
- community services for the disabled and
- juvenile remand centre.

This paper will be a critical evaluation of this innovative, collaborative and successful undergraduate nursing subject that was awarded the Faculty of Health Studies, Teaching Excellence Award in 1995.

20 **Peggy Adamson**
Mathematics and Science Support

Many students have difficulty at University because they lack the assumed background in mathematics or science, and do not have the learning skills needed for independent study in these areas. A Learning Centre can provide these students with the support they need as they develop into independent learners.

21 **Stephen Parnell**

Give a person a fish and you feed him/her for a day. Teach them how to fish and you feed them for life. Every day the library grapples with the dilemma that many of our users don't want to know how to find information, they just want to know the answer to an assignment question. This session deals with this question of responsibility and with other aspects of information literacy for both on campus and distance education students. These include offering appropriate information literacy sessions and resources, countering the widespread belief amongst students that everything needed for an assignment is on computer, that libraries are difficult to use and that all information is of equal value.

22 **Lesley Montfort**

The Department of Environmental Sciences, in the School of Environmental and Information Sciences, identified the substantial role graduates can play within the Quality Assurance Process. Through the introduction of an Alumni Seminar Series Day graduates are invited to return to University to provide us with another perspective of the quality of information and education needed for successful attainment of employment. The poster will give an outline of how and why the Alumni Seminar Series Day has become a significant part in our Department's overall success.

23 **Maria Hutchins**
Determining optimal feedback on assignments

Research in the subject Principles of Ecology has been related to determining the most effective feedback procedures and optimum amount of feedback required in the writing of scientific research reports by internal students. Students submitted 5 written reports and the results were analysed. Significant improvements were achieved between reports 1 and 2, and again between reports 2 and 3, but not thereafter.

24 **Dirk H.R. Spennemann, Lesley Montfort & Greg Fry**
Library use as a generic skill.

The School of Environmental and Information Sciences has identified a series of generic skills graduates should possess upon entering the workplace. These skills are not taught separately, but embedded into different subjects. We will review the effectiveness of such skill transfer based on experiences gained in Spring 1996 from the perspective of lecturers and library staff.

25 **Perry Share**
Assessment and the first year experience

Many university teachers complain about the quality of work provided to them by first year students, and it is commonplace to hear laments for a mythical golden era (long past, of course!) when students were far more literate: in both the strict definition of the term but also in terms of 'cultural literacy'. Now of course, they think *The Dismissal* was a mini-series about cricket and even in Poland, it has been reported, 13% of students think Stalin was a rock star!

None of this, of course, gets one anywhere. There is little if anything that we can do about the (alleged) shortfallings of the primary and secondary sectors (except perhaps turn out better teachers) and we have even less influence over the multifariously different lives and backgrounds of our 'mature age' students.

It is a fact that the student body is always changing. The issue for us is: how to best deal with the situation as it presents itself. One way is to put more resources into bridging programs, study skills assistance, student support mechanism etc. all of which the university does already do with various degrees of success and enthusiasm.

A key area where we as university teachers CAN usefully act, to get back to my opening comment, is in the area of assessment. For it is (potentially) here that some of our richest 'communication' with new students can take place; where we have a chance to learn a bit about them and their interests, talents and feelings; and where we can begin the long process of introducing them to new and exciting fields of knowledge in such a way that they will emerge positively from the experience (now known as 'life long learning!)

This session looks at some of my experience in assessing first year students: with a focus on the disciplines of sociology and media studies. I hope to explore some of the principles behind my assessment practices; to look at the strengths and weaknesses of various strategies; to evaluate the effectiveness of different sorts of assessment practice; and to look to the future and the challenges posed by new technologies.

26 **Ian Garbett**

This poster cites a basis that enables valid deduction of subject and course content at first degree level. A rationale for a first degree course structure is also given, and an argument for clear separation (if the course is not of a pure academic study) between 'professional skills' content and academic content. Acceptance of this basis implies that any question of a given assessment or teaching tools effectiveness is considered secondary to the question of 'what shall be taught'.

27 **Karen Pollard**

This poster presents a synopsis of a research study that investigated links between students' approaches to learning as measured by Biggs' Study Process Questionnaire and their examination performance in the subject Radiation Biology and Protection.

General trends showed a negative relationship between surface approaches and examination marks, and a positive relationship between all non surface component Study Process Questionnaire subscales with examination marks. Statistically significant correlations were found for three subscales of the Study Process Questionnaire and grouped assessment categories (P = 0.01, N = 18).

Comparisons were made with previous work in this field, and implications for teaching, assessment, and the learning environment were also considered.

28 **Liz Smith, Bill Lord & Bob Hill**

AMOz on CD was funded through the Teaching Technology Implementation committee in 1996. Users explore the experience of people from a variety of ethnic backgrounds growing up in Australia. Participants in the demonstration can try the almost complete material and contribute ideas to its evaluation.

29 **Maria Hutchins**
Determining optimal feedback on assignments

Research in the subject Principles of Ecology has been related to determining the most effective feedback procedures and optimum amount of feedback required in the writing of scientific research reports by internal students. Students submitted 5 written reports and the results were analysed. Significant improvements were achieved between reports 1 and 2, and again between reports 2 and 3, but not thereafter.

Use of electronic mail among Park Management students at Charles Sturt University

Dirk H.R. Spennemann
School of Environmental and Information Sciences

Abstract

The development of effective multimedia and computer assisted learning is only possible if we understand the student's expectations, attitudes and abilities in relation to computers in general and computer-based learning in particular. However, most of the data on the use of computers in tertiary education are based on experiences with information technology (IT) students, where it can be posited that such students by virtue of their choice of study exhibit a preference for computer use. Such studies, therefore, are hardly useful for the purposes of a general comparison. This paper presents an analysis of student use of electronic mail in the Spring 1995 subject of PKM266.

Introduction

The use of electronic mail (e-mail) has featured in a few postings to the American Association for Higher Education AAHESGIT Listserver. E-mail has been used as an asynchronous discussion group when posted to all students (Kohen 1995) or via electronic conferencing and tutoring (Kemp 1995; Scott 1995) even over vast distances with tutors residing in different countries (Schoening 1995, critique by Coombs 1995). Mainstream communication seems to be the prime use (Gilbert 1996; Green 1996), with the observation from a survey of US academic institutions that e-mail has become a 'core tool' for communications (Green 1996), increasing the workload of the faculty members (Gilbert 1996). US experiences showed that e-mail was only used by some students, often those who felt uncomfortable in a class situation, while others used the media to receive information, but did not participate (Kohen 1995). The dominant groups in e-mail and class room discussions tend not to be the same (Crouch 1995; Kohen 1995). The student's attitudes to e-mail were mixed, with some students seeing the medium as more impersonal than face-to-face contact, while others saw e-mail more personal than a class room situation (Ehrenberg 1996). The perceived depersonalisation of e-mail allowed some students to be more frank and aggressive than they would be in a normal classroom situation (Airudi 1995). One contributor even hailed e-mail as the return of the written word, facing near extinction by telephone and visual media (Goldstein 1996).

In view of the discourse, it is important that we understand what kind of attitudes students display towards to e-mail and what kind of behaviours they exhibit. For most CSU staff e-mail has become such a common occurrence that few could do without it. But, we have to ask, do students treat the system in the same way? How do park management students, for example, see e-mail? Do they treat it in the same way as staff? Is e-mail communication a viable option and alternative to contacting students via messages on notice boards?

Student attitudes to e-mail

The information presented in this section has been culled from a questionnaire that had been administered at the beginning of the 1995 spring term to the internal student population, and during the residential school period of the term to the external population. Some sections have been drawn for the present analysis and the remaining data are being analysed for a separate study.

At the beginning of the term, internal and external students, were asked whether they had access to e-mail and how often they used e-mail packages. Table 1. summarises the responses. The staff responses (School of Environmental and Information Sciences) have been included to illustrate the level of acceptance of the technology among staff. The external student access to e-mail was determined by socio-economic and locational parameters, and thus the diversity of a responses could be expected and holds no surprises. What is surprising, however, is that 32.7% of the internal student population stated that they had no access to e-mail. In the light of the computer facilities at CSU this response shows that there is a knowledge gap. To some degree this issue is of relevance when discussing the e-mail use of the students.

Table 1. Access to e-mail, combined data.

	EXT	INT	Staff
yes	35.94	60.00	91.43
no	37.50	32.73	5.71
not known	18.75	3.64	0.00
no answer	7.81	3.64	2.86
n	64	55	35

91% of the university staff state that have access to e-mail which underlines the importance CSU affords this communication technology. Three quarters of the staff use e-mail on a regular basis (table 2), but only 5% of the internal students made the same use of the medium. A quarter of the internal students use the programs often or regularly, while external students, usually not networked, use it the least often.

Table 2. Usage of E-mail packages (in %)

	EXT	INT	Staff
never	32.81	5.45	0.00
seldom	12.50	18.18	2.86
once in a while	4.69	32.73	14.29
often	1.56	20.00	5.71
regularly	7.81	5.45	74.29
no answer	40.62	18.18	2.86
n	64	55	35

But access to computers and computer programs is only one part of the equation. Confidence with computer programs is the other, and a more important one at that. Respondents were given the option to select one of the following answers: power user, very confident, confident, comfortable, uncomfortable, a bit daunted, very uneasy, near panic, not yet used.

Table 3. Level of computer confidence-E-mail

	EXT	INT	Staff
power user	0.00	1.82	11.43
very confident	3.12	7.27	22.86
confident	3.12	18.18	28.57
comfortable	7.81	36.36	22.86
uncomfortable	7.81	10.91	5.71
a bit daunted	3.12	5.45	2.86
very uneasy	3.12	1.82	0.00
near panic	1.56	0.00	0.00
no answer	31.25	12.73	5.71
never used	39.06	5.45	0.00

Table 3 sets out the responses to this question. Among the internal students 18% felt uncomfortable or even more uneasy, while 63% felt comfortable. Yet, it is only those who feel confident with the technology who would make prime use of the technology. Only a quarter of the internal student population stated that they were confident in the use of the technology.

CSU has in place programme to ensure that students are trained in the use of networked facilities. Thus it is not surprising that 50% of the students mentioned that they had received e-mail training at CSU (table 4). To assess how students actually used the technology monitoring program was set up.

Table 4. Level of computer training received-E-mail

	EXT	INT
never	4.69	0.00
friend	40.62	9.09
manual	1.56	0.00
played with it	7.81	9.09
T.A.F.E course	7.81	7.27
work course (incl. uni)	10.94	50.91
no answer	26.56	23.64

Methodology

At the beginning of the term a distribution list was set up in the electronic mail programme used by the university (*Pegasus Mail*). This list contained all accounts of students (n=55) enrolled in the subject. All e-mail messages were sent with the option 'Request confirmation the message is read' enabled. All these receipt messages were stored in special archive folder. These message consist of the following format:

12345678@noddy.mur.csu.edu.au RCPT: Assignment number 3 14 Sep 95 11:32

At various intervals these entries were printed out, the print outs scanned in and the data converted to a spreadsheet. In addition to the student's receipt messages, the original postings of the messages were entered. This then allowed the calculation of the time elapsed from the mailing of the message to the first reading.

Confidentiality and research ethics

The fact that the messages were serially mailed to student accounts and that these accounts automatically confirmed the reading of the message implies that student account numbers are logged on the on the receipts. This obviously deletes any anonymity and allows the tracing of an individual student's e-mail behaviour. The student (account) numbers were kept in order to run analyses on whether students let messages run up, *ie* did not use the computer for prolonged periods and then answered all messages in a row once they returned to the system. The student account number also allows the targeting of specific students. Analysis of the e-mail use behaviour could have been construed as unduly interfering with the academic assessment of the student. In order to prevent this, the data were merely saved and printed out, and the systematic analysis of the e-mail material was delayed until early 1996, by which time all assignments (including grade pendings) had been assessed and returned.

The data

In total 24 messages topics were sent. The messages contained both reminders for the entire class, announcements, offers of free excursions and tips for assignments. The mail messages were sent out as and when the need arose. As the group attended weekly tutorials (compulsory attendance) as well as lectures (attendance not monitored) some communication and announcement was made in the traditional fashion. As a result the e-mail format was irregular and not cast in the format of a weekly message. This method implied that the e-mail behaviour of the students described here is that of student responses to occasional messages. Students could contact the lecturer during the normal consultation hours via the phone or in person, and outside these hours if the lecturer was in, as well as via e-mail.

The first lecture after the end of the mid-term break was used to re-emphasise to students the need to read their e-mail. Even without a systematic analysis it had become apparent that students did not read their e-mail on a regular basis. The fact that some people took over 40 days to read the mail messages was commented on. As a direct result of this the number of 'readings' shot to a total number of 56 on the same day, 4 times more than the previous average (figure 1) and remained high for the next days.

In a simultaneous development students were given the option of submitting their tutorial paper by e-mail to the lecturer who would the repeat the message to all members of the tutorial group, rather than the student having to hand out photocopies of their paper (worth $16.00) to the other students in the tutorial group. Students were frequently reminded to read and make use of their e-mail messages. These reminders always occurred in class or during tutorial sessions.

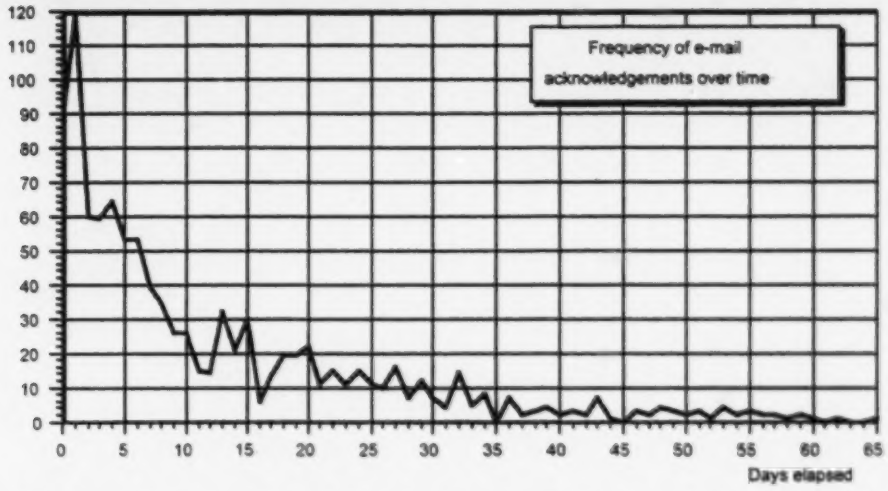

Figure 1. Frequency of e-mail readings of all student messages broken down by days elapsed since the message was sent.

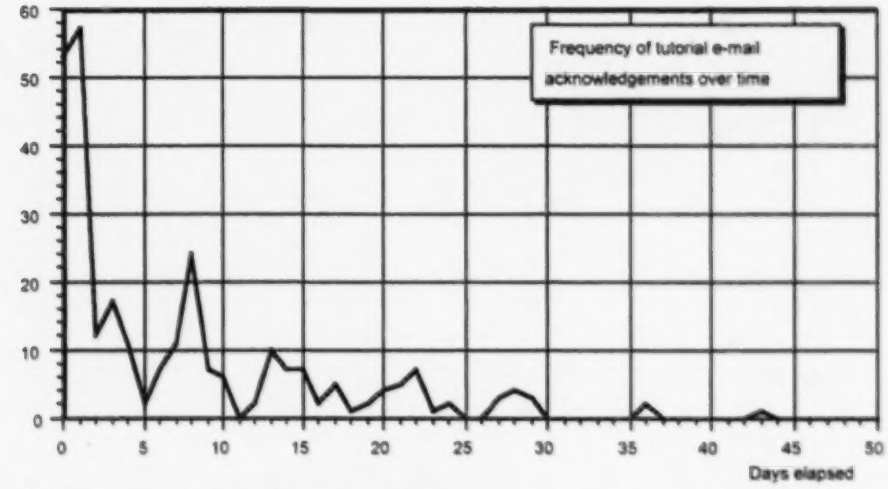

Figure 2. Frequency of e-mail readings of tutorial messages broken down by days elapsed since the message was sent.

Tracers

All but one e-mail message were fully genuine messages sent to students. As ongoing monitoring of the student's responses had shown that most students did not read their e-mail for a prolonged period of time, it was deemed opportune to test whether any of the students would use their e-mail facilities during the term break, ie. the period of residential school. For this purpose a 'reminder' message was sent out on Sunday 10 September, two days after the last day of on-campus teaching It was intended to keep as this was to be the only such message during the term break. However, other notification requirements arose which led to further messages during the residential school period. On-campus classes for the subject resumed on 3 October 1995. In preparation for this, another message was sent on 2 October.

Interpretation of the results

The overall pattern of viewing as well as the pattern of mailing was uneven before the term break, which did not create a sense of urgency among the students to always check their e-mail.

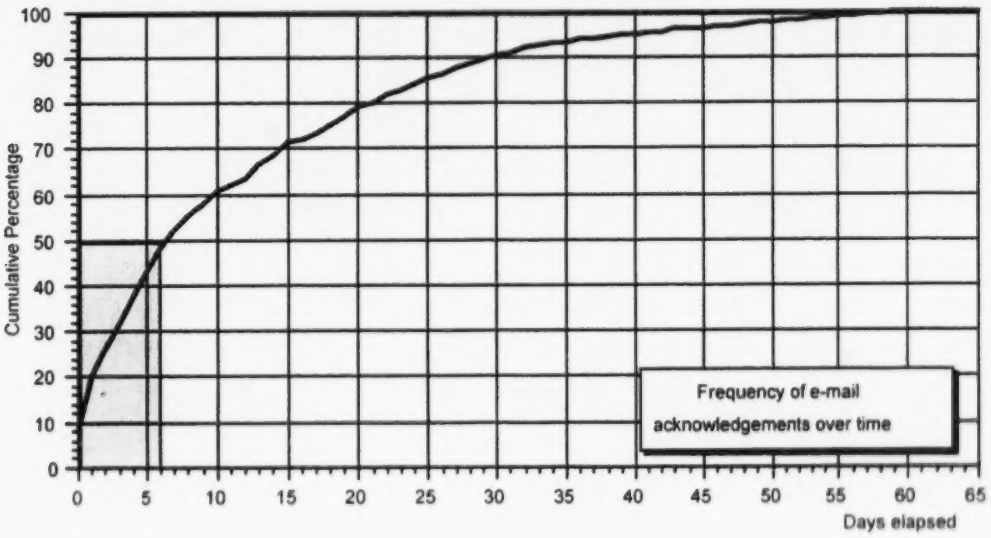

Figure 3. Cumulative frequency of e-mail readings (all student messages) broken down by days elapsed since the message was sent.

Average response times

The times (and days) used in this discussion have been corrected for the opening hours of the computer centre, i.e. it was assumed that none of the students would have dial in access and could access the e-mail from home. The average response time of all responses was 157.7±168.9 hrs (corrected time), with the quickest response immediately after posting and the longest response 847.8 hrs later (corrected). The high standard deviation indicates that there was a wide range of response times.

Figure 2 plots the frequency of e-mail readings plotted against the number of days elapsed for the all student e-mail (top) and tutorial e-mail only (bottom). The peak of e-mail reading occurred a day after the mail was sent out, with a notable 'tail' of readings starting 10 days after the mail was send. This overall delay in reading the messages is not very encouraging.

Figure 3 shows the cumulative frequency (in %) of the time elapsed between sending and reading a message. Shaded is the 50% intercept, which in the all student mail was attained after 6 days (a 70% intercept after 14 days) and in the tutorial e-mail after 3 days (7 days), i.e. half the time.

Table 5. Percentage distribution of e-mail usage broken down by day of the week

	All student e-mail	Tutorial e-mail
n	1056	275
Monday	17.14	27.27
Tuesday	27.36	33.82
Wednesday	14.41	6.91
Thursday	22.01	16.73
Friday	7.79	2.55
Saturday	3.31	2.55
Sunday	7.98	9.46

Variations based on the day of the week

Figure 4 shows the breakdown of student's e-mail reading over the week. The lectures were held on Tuesday morning (9-10 am), Wednesday (9-10) and Thursday. The tutorials were concentrated on Tuesdays, in a staggered two-hour fashion. Most of the students would have had some time during the day and that could well explain the Tuesday peak. The comparatively high Monday returns can be explained by the fact that many students would hand write their assignments over the weekend and then type them in the following Monday, thus again accessing the computer. In both cases (all student e-mail and tutorial e-mail) about 10% of the mail was read on Sunday, with Saturday by far the lowest day. While the causality for this is not known, it may well be attributed to the fact that the library is closed on Saturdays and thus fewer students come to the university.

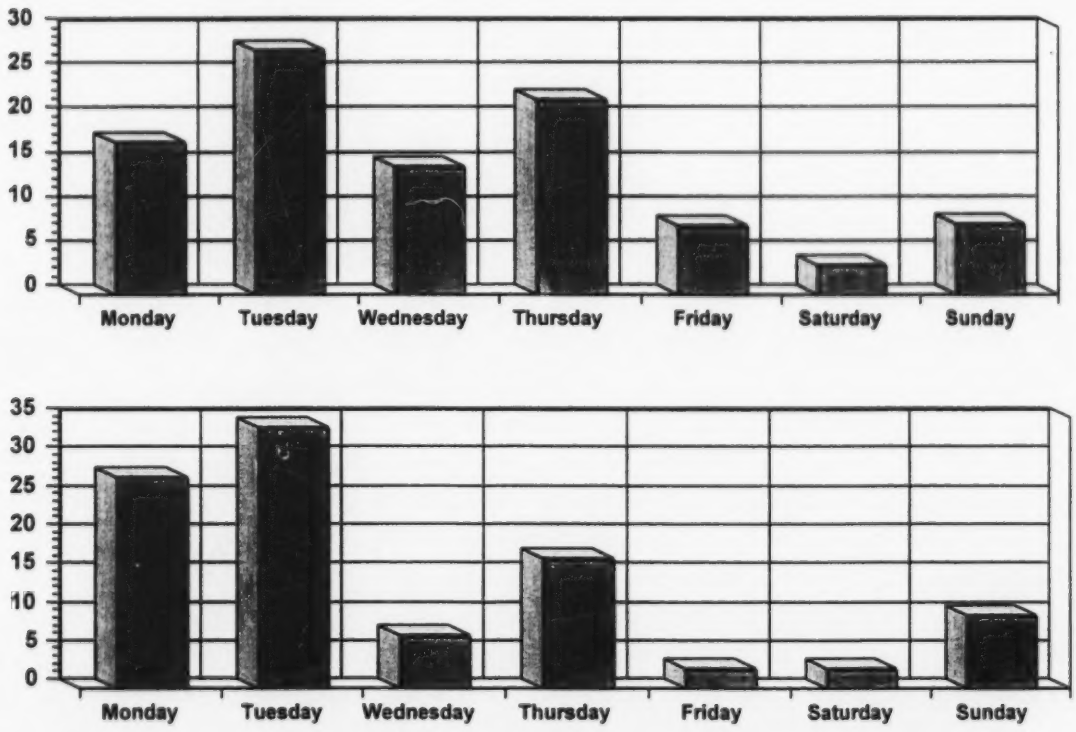

Figure 4. Percentage distribution of e-mail usage broken down by day of the week. Top; all student e-mail (n=1056). Bottom: tutorial e-mail (n=275)

Variations caused by the time of day

The analysis of the e-mail reading behaviour of students is broken down by time of day in figure 5. Both the tutorial and the all student mail readings exhibit a peak of activity in the afternoons, at 14:30 for the tutorials and at 15:30 for the all student mail. It would appear that students read the mail after their lectures and before the end of the day. If, however, we combine all e-mail readings (all student e-mail and all tutorial e-mail) and separate them out into that e-mail read before the recommencement of term and that mail read after that date (2 October 1995, no messages read on that day), then a change in student behaviour becomes apparent (figures 6 and 7).
Before the recommencement of classes, a large peak was placed at 3:30 in the afternoon, suggesting that students would read their mail after lectures, when they sat down on the computer to do some work.

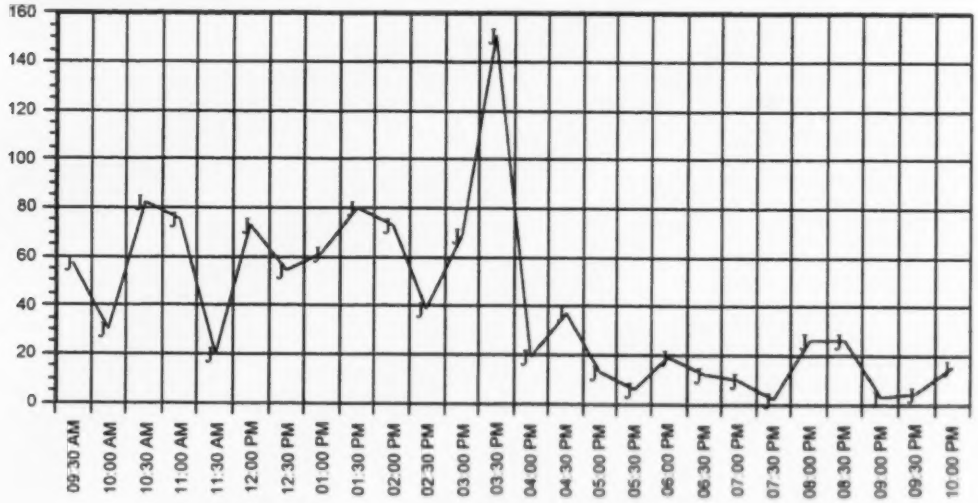

Figure 5. Frequency of e-mail receptions (all student messages) during the day.

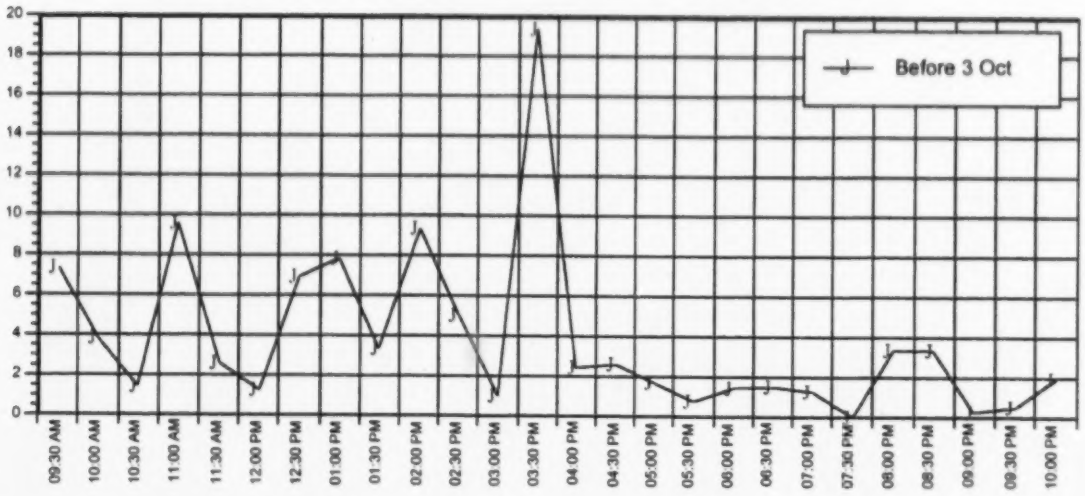

Figure 6. Frequency of e-mail receptions during the day, before recommencement of term.

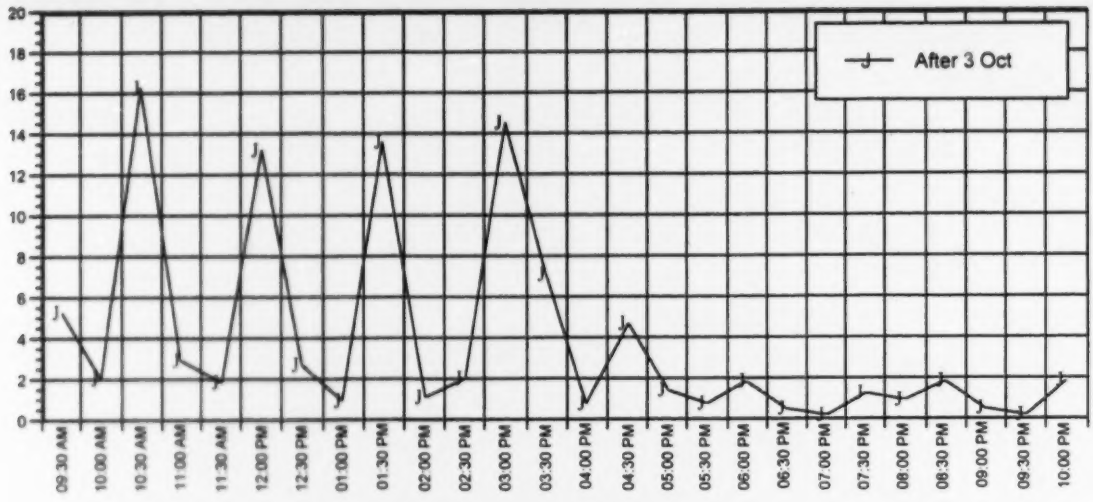

Figure 7. Frequency of e-mail receptions during the day, after recommencement of term.

Minor, but less well defined peaks occurred in the mornings. After the recommencement of classes a major change had taken place. There were now four clear peaks of reading, starting between 10:00 and 10:30 and following on in two-hourly intervals until 3:00-3:30. This clearly reflects the lecturing and tutorial patterns of the university, and suggests that after the term break students had become more alerted to the need to read e-mail and did so systematically. This change suggests that the changed emphasis on e-mail after the break is reflected in student behaviour.

Regular users vs. incidental users

Figure 8 plots the cumulative frequency of students reading some or all their e-mail messages (in % read). It shows that a quarter of the students only read half the messages, while half the population read 90% or more of the messages. One third of the students read all the messages, while 5% read none of them. These figures are certainly a sobering warning to those who are prone to overestimate the use and acceptance of the technology in view of their own usage patterns.

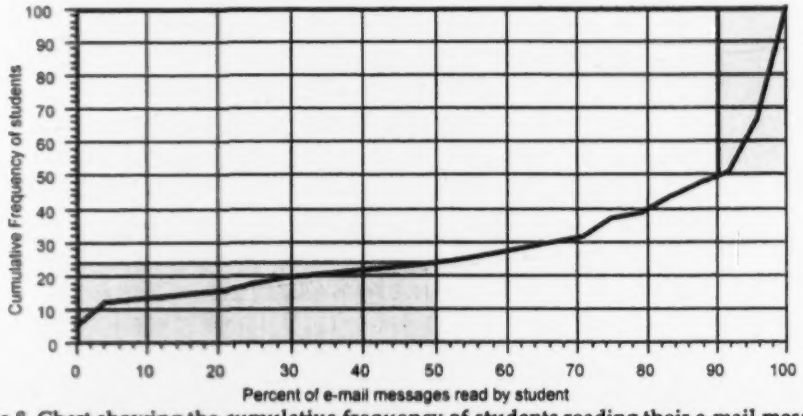

Figure 8. Chart showing the cumulative frequency of students reading their e-mail messages

To assess whether it was always be the same students who answered early, the responses to each message were sorted by date and time and given a sequential number as ranking. The frequency of the ranking was plotted against each student. The plot shows substantial variation in the patterns. Overall a broad spread across the

board could be observed and only a few students stood out as being always early or continually late in their reading. In addition, the percentage of all student e-mail read was plotted against the time it took the student to read it to investigate whether there was a connection between those students late in the reading and those who did not read all of their mail There are quite a few students who read the message reasonable early, but who did not read all their messages. The interpretation of this pattern could either be that they had read some of the initial messages and decided that the messages were not worth reading at all, or that they used the computer at the same time as friends and relied on their friends to pass on any relevant information.

Student's use of e-mail

A different issue is the student's use of e-mail to send messages rather than to merely read them. All students mail interaction was stored in a separate folder. Excluding the tutorial paper submission, in total only eleven students made use of the e-mail as a communications medium, and only one of them used the medium extensively. It is not surprising that there is a substantial overlap between those who used e-mail to communicate with the lecturer and the submissions of the tutorial paper by e-mail. This pattern reflects the attitudes of the students expressed before the beginning of the term. In the questionnaire mentioned earlier, students were asked 'You wish to get a some brief information from your lecturer. What would you do?' The responses are shown in table 6. Very clearly, e-mail is very low on the list of options for internal students.

Table 6. Mode of consultation with the lecturer, combined student population

Student approach to lecturer	EXT	INT
during consultation hours	4.69	58.18
try to catch the lecturer	1.56	25.45
phone lecturer	84.38	7.27
write letter	1.56	0.00
send a fax	1.56	0.00
send e-mail	4.69	3.64
no answer	1.56	5.45
n	64	55

The offer to submit tutorial assignments by e-mail, had been taken up by some students, but not by all, despite the financial incentives it offered. Interestingly, there appears to be a difference in the tutorial groups. with two groups having a 50% participation rate (calculated from the date of offer), while the third group had only a 15% participation rate.

Student attitudes to changing technologies

The analysis of the questionnaire, as well as that of the comments has shown up several issues, which have been discussed in the previous sections. Discussions with Department of Information Technology (SEIS) staff had shown that in their distance education subjects they did not experience inordinate delays in e-mail reading by students. Unlike the system used for PKM 266, however, they sent out weekly messages at the same time (Atkinson 1996). The irregular mailing before the commencement of term break may well have contributed to the student attitude of treating e-mail as not very significant. This interpretation is reinforced by the change

of reading behaviour after the term break. Students had become alerted to the need to regularly read e-mail and did so systematically.

The same subject was offered in spring 1996 and the data have been collected, but will not be analysed until March 1997, after all assignments (incl. grade pendings) have been returned. However it has already become apparent from the saving of the receipt messages, that there are still students who let four to five week's worth of e-mail run up. This occurred despite a regular flow of e-mail messages of at least a message per week, despite the requirement to submit one assignment via e-mail and despite the fact that the lecture material was WWW based, thus requiring the student to use a networked computer.

What may be the underlying cause? Students were not normally exposed to electronic mail communication in any of the other subjects of the parks management degree. Thus the student sample of 1995 (as well as the current 1996 group) was exposed to this mechanism for the first time after 18 months of study. Since the 1995 study has been conducted other subjects have made use of e-mail and one can expect that more students will have been exposed to the medium of communication. It remains to be seen whether the student attitudes will change over time.

It would follow from this analysis that a) e-mail messages should be sent more frequently with at least one message per week and that b) e-mail should be promoted as a frequent means of communication between students and staff, especially in the new situation in Albury, where some lectures take place in town, while others occur at Thurgoona.

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